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Short Communication

Chromosome observations in *Cayratia,* Vitaceae.

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Chromosome numbers of *Cayratia corniculata* from Amami Island, Japan, and *C. maritima* from Bali, Indonesia, are newly reported as $2n$=40, diploid.

Key words: Araceae, *Cayratia corniculata*, *Cayratia maritima*, chromosome number, Vitaceae

Cayratia japonica (Thunb.) Gagn. (Vitaceae) contains both diploid (n=20, $2n$=40) and triploid (n=30, $2n$=60) populations (Okada *et al.* 2003). Takano & Okada (2002) speculated that the triploid is the result of hybridization between tetraploid and diploid parental species or from fertilization between reduced and unreduced gametes.

There is information on only six of the approximately 45 species of *Cayratia*, (Hatusima 1975; Table 1). Except for *C. geniculata* Gagn. and *C. tenuifolia* Gagn. with $2n$=30, all have a basic chromosome number, 20. In addition to *C. japonica*, intraspecific polyploidy is known in *C. carnosa* Gagn. (n=40, n=60), and in *C. pedata* Gagn. (n=20, n=40). Triploids (n=30, $2n$=60) are known only in *C. japonica*. More information on the chromosomes of *Cayratia* may help us to understand the origin of the triploids of *C. japonica* and the biological aspects of polyploidy in *Cayratia*.

To clarify the origin of the triploids in *Cayratia japonica*, we counted the chromosomes of two species of *Cayratia*, *C. corniculata* (Benth.) Gagn. and *C. maritima* Jackes, neither of which had been observed cytologically previously.

Living stocks of *Cayratia corniculata* (= *C. yoshimurae* (Makino) Honda) were collected from the edge of the parking area, Mt. Yuwan, Amami Island, Kagoshima Pref., Japan (voucher specimen: *Okada 5647*), and of *C. maritima* from Taman Ayung, Mengwi, Badung, Bali, Indonesia (voucher specimen: *Okada 5656*). The stocks of both species were transplanted to the greenhouse of the Botanical Gardens, Faculty of Science, Osaka City University. Voucher specimens are in OSA (Osaka Museum of Natural History) and the Botanical Gardens, Faculty of Science, Osaka City University. Chromosomes were observed using the method reported previously (Okada 1984).

Chromosome numbers of both *Cayratia corniculata* and *C. maritima* have not previously been reported. We counted $2n$=40, diploid, for both species (Fig. 1). The size of the chromosomes in both species varied similarly, ranging from about 1 to 2.5 μm, which is nearly the same as in of *C. japonica* (Okada *et al.* 2003). Pollen fertility of *C. corniculata* was about 98%.

From these observations, we now know the chromosome number for eight species of *Cayratia*

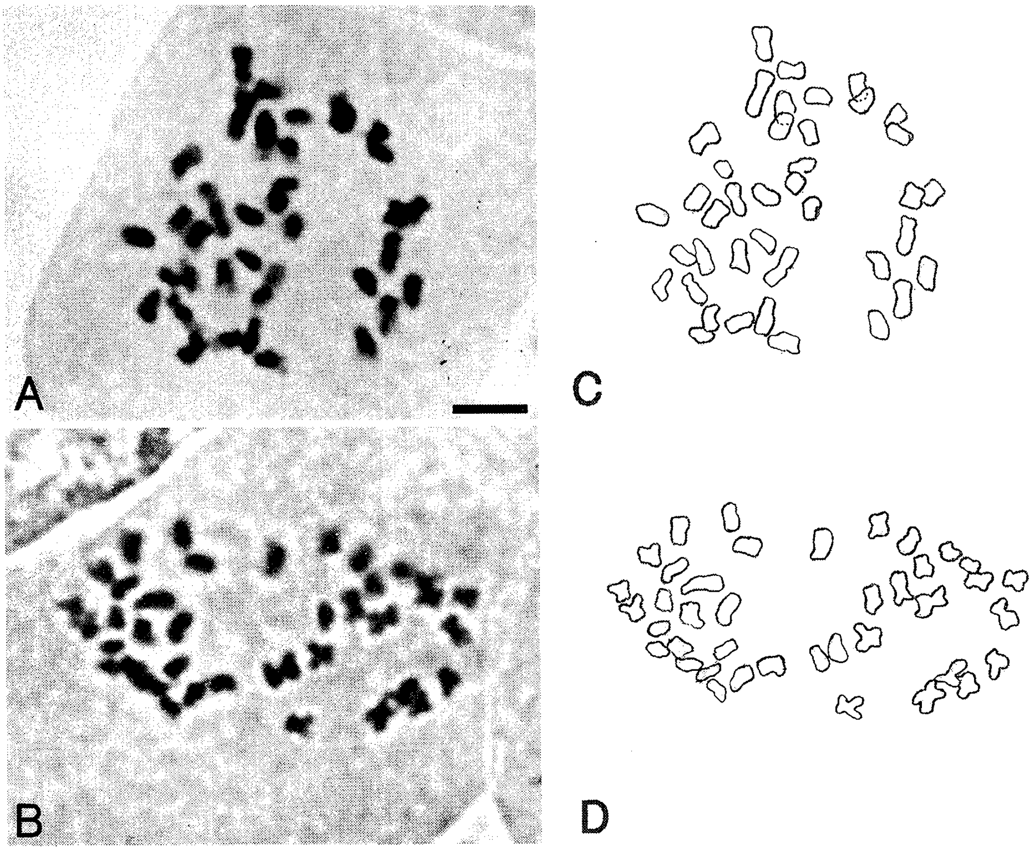

FIG. 1. Somatic metaphase chromosomes of *Cayratia corniculata*, 2*n*=40 (A, C) and *C. maritima*, 2*n*=40 (B, D). A, B: microphotographs. C, D: explanatory drawings of A and B, respectively. Bar in A, 4μm.

TABLE 1. Chromosome numbers of *Cayratia* species.

Species	n	2n	Source
C. carnosa Gagn.	40		Sidhu *et al.* (1983)
		80	Vatsala (1960), Mitra & Datta (1967), Hazra & Sharma (1970), Sarkar *et al.* (1972)
	60		Patil *et al.* (1980)
C. corniculata (Benth.) Gagn.		40	this study
C. geniculata Gagn.		30	Elena (1967)
C. japonica (Thunb.) Gagn.		60	Mitsukuri & Hayashi (1953)
		40	Huang *et al.* (1988)
	20,30	40,60	Okada *et al.* (2003)
C. maritima Jackes		40	this study
C. mollissima (Wall.) Gagn.		40	Hellmayr *et al.* (1994)
C. pedata Gagn.	20		Patil *et al.* (1980)
	40		Sarkar *et al.* (1972)
		80	Vatsala (1960), Hazra & Sharma (1970)
C. tenuifolia Gagn.		30	Shetty (1958, 1959), Vatsala (1960)

(Table 1). Six of the eight species commonly have a basic chromosome number, 20, while two species, C. *geniculata* and *C. tenuifolia*, have different numbers. Further cytological observations are required.

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